

REMARKS

Claims 1-4 and 6-11, are pending and stand rejected.

Claims 1, 2, 6, 7, 10 and 11 have been amended. No new matter has been added.

Claim 11 has been objected to because the meaning of the phrase "the audio signal detected by the microphone" needs clarification.

Applicant, through his attorney, wishes to thank the examiner for his observations and has amended claim 11 to provide clarification regarding the audio signal.

Having amended the language of claim 11 to clarify the audio signal, applicant submits that the reason for the examiner's objection has been overcome and can no longer be sustained. Applicant respectfully requests entry of the amendment and withdrawal of the objection.

Claims 1, 6, 7 and 11 stand rejected under 35 U.S.C. §103(a) in view of Linder (WO 98/01956, already of record). Claims 2, 3 and 8 stand rejected under 35 USC 103(a) as being unpatentable over Linder in view of Houser. Claim 4 stands rejected under 35 USC 103(a) as being unpatentable over Linder in view of Allen. Claims 9-10 stand rejected under 35 USC 103(a) as being unpatentable over Linder and Houser in view of Allen.

Applicant respectfully disagrees with, and explicitly traverses, the examiner's reasons for rejecting the claims. However, in order to advance the prosecution of this application, applicant has elected to amend the claims to more clearly state the invention. More specifically, claim 11 has been amended to recite, in relevant points:

11. An audio cancellation module, comprising:

an audio input for receiving an audio signal that includes a speech signal and a plurality of different background noises, said audio signal including an indication of a highest signal source from among said speech signal and each of said plurality of different background noises; and

at least two additional audio inputs for receiving audio source signals, respectively, from respective

independent audio sources, the at least two audio source signals contributing to the plurality of different background noises included in the received audio signal, the audio cancellation module being operative to produce a signal by canceling from the audio signal received those signals not indicated to be the highest signal source.

No new matter has been added. Support for the amended claim language may be found on page 6, lines 23-25 of the instant application.

Linde, as read by applicant, discloses a system that removes repetitive background noise that has a characteristic frequency and associated period from an information signal. Linde removes the background noise by delaying the background noise with respect to the information signal to cancel the repetitive portion of the information signal (see page 6, line 28-29). Linde fails to disclose or suggest "canceling from the audio signal received those signals not indicated to be the highest signal source," as is recited in the claim.

A claimed invention is prima facie obvious when three basic criteria are met. First, there must be some suggestion or motivation, either in the reference themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine the teachings therein. Second, there must be a reasonable expectation of success. And, third, the prior art reference or combined references must teach or suggest all the claim limitations.

The examiner alleges that the invention recited in claim 11, would be obvious in view of Linde as Linde discloses a noise cancellation circuit and it would be obvious step to include duplicative noise cancellation circuits. However, applicant submits that even if the circuits of Linde are duplicated, as suggested by the examiner, the duplicated devices would fail to disclose or suggest all the elements recited in the claim. Linde fails to teach or suggest tracking the highest signal as is recited in the claims.

Having shown that Linde fails to teach or suggest the elements recited in claim 11, applicant submits that the reason for the examiner's rejection has been overcome and the rejection can no longer be sustained. Applicant respectfully requests the amendment be entered and the rejection withdrawn.

With regard to claim 1, this claim has been amended to recite, in relevant part:

1. A speech recognition apparatus comprising:

an audio cancellation module, including:

an audio input for receiving an audio signal that includes a speech signal and a plurality of different background noises;

at least two additional audio inputs for receiving at least two audio source signals, respectively, from independent audio sources that primarily do not include said speech signal, the at least two audio source signals contributing to the plurality of different background noises of the audio signal and are within a proximity of the sensitivity range of a microphone for capturing said speech signal and each respective audio input arranged within a proximity of a respective audio source,

wherein the audio cancellation module is operative to cancel the at least two audio source signals from the audio signal received, substantially sequentially, to leave a remainder of the audio signal received that comprises primarily the speech signal; and

a speech recognizer for recognizing at least part of the speech signal.

No new matter has been added. Support for the amended claim language may be found on page 6, lines 4-6.

As noted above, Linde discloses a system that removes repetitive background noise that has a characteristic frequency and an associated period. Linde fails to disclose or suggest "canceling the at least two audio source signals from the audio signal received, substantially sequentially," as is recited in the claim. Hence, even if the circuits of Linde are duplicated, as suggested by the examiner, use of the duplicated devices would not disclose or suggest canceling the noise sources substantially sequentially, as is recited in the claim.

Having shown that Linde fails to teach or suggest all the elements recited in claim 1, applicant submits that the reason for the examiner's rejection has been overcome and the rejection can no longer be sustained. Applicant respectfully requests the amendment be entered and the rejection withdrawn.

With regard to claim 7, this claim recites a consumer device including an audio cancellation module as recited in claim 1. The examiner rejected claim 7 citing the same reference used in rejecting claim 1. Thus, the applicant's remarks made in response to the examiner's rejection of claim 1 are also applicable in response to the examiner's rejection of claim 7.

In view of the amendments made to claim 7, which are similar to the amendments made in claim 1, and for the remarks made with regard to the rejection of claim 1, which are repeated herein in response to the rejection of the above referred to claims, applicant submits that the examiner's reason for rejecting claim 7 is overcome and the rejection can no longer be sustained. Applicant respectfully requests reconsideration, and withdrawal of the rejection.

With regard to claims 2, 3, 4, 6, 8-10, these claims ultimately depend from claims 1 and 7, respectively, which have been shown to allowable over the primary reference (Linde).

Houser discloses a system for "controlling a device ... and for controlling access to broadcast information. Houser is silent on audio cancellation and methods of audio cancellation.

Allen discloses a system for modifying a speech signal by applying a gain factor that is a function of the level of background noise at the receiver. Allen teaches increasing the gain applied to the speech signal in view of the background noise to overcome the background noise. Allen is silent on removing the background noise source(s).

Consequently, even if the references were combined, as suggested by the examiner, the combined devices would not include all the elements recited in the claims. As shown, Linde does not teach or suggest all the elements claimed, even if the duplicative device were incorporated, and neither Houser nor Allen provide any suggestion regarding with noise cancellation.

Accordingly, the above referred-to claims are not obvious in view of the cited references, because the combination of the references cited do not teach or suggest all the elements recited in the claims. Applicant submits that the reason for the examiner's

rejection has been overcome and the rejection can no longer be sustained. Applicant respectfully requests entry of the amendments and withdrawal of the rejection.

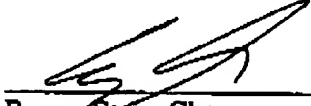
For all the foregoing reasons, applicant respectfully requests reconsideration and submits that all the present claims are patentable in view of the cited references. A Notice of Allowance is respectfully requested.

Should any unresolved issues remain that the examiner believes may be resolved via a telephone call, the examiner is invited to call applicant's attorney at the telephone number below.

No fees are believed necessary for the filing of this Amendment and Response.

Respectfully submitted,
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